

WHAT IS CLAIMED ISs:

1. An image forming apparatus comprising:  
an image bearing member;

developing means for developing by developer an  
5 electrostatic latent image formed on said image bearing  
member;

potential detection means for detecting the  
potential of the electrostatic latent image on said  
image bearing member for detection use;

10 potential control means for controlling the  
electrostatic latent image for detection use in  
accordance with the output of said potential detection  
means; and

density detection means for detecting the density  
15 of a developer image for detection use,

wherein said density detection means detects the  
density of a developer image for detection use obtained  
by developing by said developing means an electrostatic  
latent image for detection use potentially controlled  
20 by said potential control means.

2. An image forming apparatus according to Claim  
1, further comprising:

developer amount control means for controlling the  
25 amount of developer to be replenished to said  
developing means in accordance with the output of said  
density detection means.

3. An image forming apparatus according to Claim 2, wherein said developer amount control means controls the amount of developer in accordance with the output of said density detection means and a target value.

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4. An image forming apparatus according to Claim 3, wherein the target value is corrected on the basis of the output of said density detection means.

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5. An image forming apparatus according to Claim 2, wherein the developer is a two-component developer containing toner and carrier.

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6. An image forming apparatus according to either one of Claim 1 to Claim 5, wherein said potential control means controls the potential of an electrostatic latent image for detection use in accordance with the output of said potential detection means and the target value.

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7. An image forming apparatus according to either one of Claim 1 to Claim 5, further comprising latent image forming means for forming an electrostatic latent image on said image bearing means for detection use,

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wherein said potential control means controls the condition of forming latent image by said latent image forming means in accordance with the output of said

potential detection means.

8. An image forming apparatus according to Claim  
7, wherein the changing amount of the latent image  
5 forming condition by said potential control means is  
variable corresponding to the output of said potential  
detection means.

9. An image forming apparatus according to Claim  
10 7, wherein said latent image forming means is provided  
with exposing means for exposing said image bearing  
member, and said potential control means controls the  
exposing condition of said exposing means in accordance  
with the output of said potential detection means.

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10. An image forming apparatus according to Claim  
9, wherein the exposing condition is an exposing time.

11. An image forming apparatus according to Claim  
20 9, wherein the exposing condition is an exposing  
intensity.

12. An image forming apparatus according to  
either one of Claim 1 to Claim 5, further comprising:

25 containing means for containing developer to be  
replenished to said developing means,

wherein a detecting operation is executed by said

density detection means after the developer is replenished to said containing means.

13. An image forming apparatus according to  
5 either one of Claim 1 to Claim 5, further comprising:  
containing means for containing developer to be replenished to said developing means, being detachably mountable on the image forming apparatus main body,  
wherein a detecting operation is executed by said  
10 density detection means after said containing means is mounted on the image forming apparatus main body.

14. An image forming apparatus according to  
either one of Claim 1 to Claim 5, wherein said image  
15 bearing member is an amorphous silicon photosensitive member.

15. An image forming apparatus according to  
either one of Claim 1 to Claim 5, wherein the density  
20 of the developer image for detection use is formed to be halftone density.

16. An image forming apparatus according to Claim  
15, wherein the density of the developer image for  
25 detection use is formed to be at 0.5 to 1.2 level as a measurement value by a reflecting densitometer.

17. An image forming apparatus comprising:

an image bearing member;

developing means for developing by developer an  
electrostatic latent image formed on said image bearing  
5 member;

potential detection means for detecting the  
potential of the electrostatic latent image on said  
image bearing member for detection use;

potential control means for controlling the  
10 electrostatic latent image for detection use in  
accordance with the output of said potential detection  
means; and

density detection means for detecting the density  
of a developer image for detection use,

15 wherein when the output of said potential  
detection means is out of a designated range, said  
potential control means controls the potential of next  
electrostatic patent image for detection use to be  
formed in accordance with said output.

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18. An image forming apparatus according to Claim  
17, further comprising:

developer amount control means for controlling the  
amount of developer to be replenished to said

25 developing means in accordance with the output of said  
density detection means.

19. An image forming apparatus according to Claim  
18, wherein said developer amount control means  
controls the amount of developer in accordance with the  
output of said density detection means and a target  
5 value.

20. An image forming apparatus according to Claim  
18, wherein the developer is a two-component developer  
containing toner and carrier.  
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21. An image forming apparatus according to  
either one of Claim 17 to Claim 20, further comprising:  
latent image forming means for forming an  
electrostatic latent image on said image bearing member  
15 for detection use,

wherein said potential control means controls the  
condition of latent image formation by said latent  
image formation means in accordance with the output of  
said potential detection means.  
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22. An image forming apparatus according to Claim  
21, wherein the changing amount of the latent image  
forming condition by said potential control means is  
variable corresponding to the output of said potential  
25 detection means.

23. An image forming apparatus according to Claim

22, wherein said latent image forming means is provided  
with exposing means for exposing said image bearing  
member, and said potential control means controls the  
exposing condition of said exposing means in accordance  
5 with the output of said potential detection means.

24. An image forming apparatus according to Claim  
23, wherein the exposing condition is an exposing time.

10 25. An image forming apparatus according to Claim  
23, wherein the exposing condition is an exposing  
intensity.

26. An image forming apparatus according to  
15 either one of Claim 17 to Claim 20, wherein said image  
bearing member is an amorphous silicon photosensitive  
member.

27. An image forming apparatus according to  
20 either one of Claim 17 to Claim 20, wherein the density  
of the developer image for detection use is formed to  
be halftone density.

28. An image forming apparatus according to Claim  
25 27, wherein the density of the developer image for  
detection use is formed to be at 0.5 to 1.2 level of a  
reflecting densitometer as a measurement value.